Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (Original) A method for decoding a plurality of serial, digital data streams from an optical signal, the method comprising:

receiving the optical signal, wherein the optical signal is a pulse amplitude modulated signal;

converting the optical signal to an electrical signal;

comparing the electrical signal with a plurality of levels;

producing comparison output signals based on the comparison of the electrical signal with the plurality of levels;

logically decoding the comparison outputs to produce decoder outputs; ~~processing the comparison output signals on a clock to produce processed output signals;~~ and

latching the ~~processed output~~ decoder outputs signals on a clock signal to generate the plurality of serial, digital data streams.

2. (Original) The method of claim 1, and further comprising selectively adjusting the peak to peak level of the electrical signal prior to comparing.

3. (Original) The method of claim 1, wherein comparing the electrical signal with a plurality of levels comprises comparing the electrical signal with N levels for M serial, digital data streams.

4. (Original) The method of claim 1, wherein comparing the electrical signal with a plurality of levels comprises comparing the electrical signal with 2^M -1 levels for M serial, digital data streams.

5. (Original) The method of claim 1, wherein comparing the electrical signal with a plurality of levels comprises comparing the electrical signal with M levels for M serial, digital data streams.

6. (Original) A method of processing an optical signal;

receiving a pulse amplitude modulated optical signal from an optical fiber;

producing an electrical signal having selected levels based on the pulse amplitude modulated signal;

comparing the electrical signal with at least one selected level;

producing a first and at least one additional serial, digital data streams based on the comparing the electrical signal with at least the one selected level; ~~and~~

logically decoding the first and at least one additional serial, digital data streams; and

latching the decoded first and the at least one additional serial, digital data streams to a first and at least one additional output.

7. (Original) The method of claim 6, further comprising:

maintaining a substantially constant peak to peak level of the electrical signal.

8. (Original) The method of claim 6, wherein comparing the electrical signal with at least one selected level further comprises:

comparing the electrical signal with an adaptive reference level that is based on peak to peak variations in the electrical signal.

9. (Original) The method of claim 6, wherein comparing the electrical signal with at least one selected level further comprises:

comparing the electrical signal with a plurality of signals.

10. (Original) The method of claim 6, wherein comparing the electrical signal with at least one selected level further comprises:

comparing the electrical signal with N levels for M serial, digital data streams.

11. (Original) The method of claim 6, whercin comparing the electrical signal with at least one selected level further comprises:

comparing the electrical signal with 2^M -1 levels for M serial, digital data streams.

12. (Original) The method of claim 6, wherein comparing the electrical signal with at least one selected level further comprises:

comparing the electrical signal with M levels for M serial, digital data streams.